

CLASSIFICATION, NEW SUBJECTS AND DEWEY DECIMAL CLASSIFICATION OVERCOMING 18TH EDITION. LIMITATIONS

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The paper discusses the problems faced by librarians and classification experts who have to deal with the limitations and inadequacies of the Dewey Decimal Classification-18th edition while handling the books dealing with new developments in human knowledge. Tries to analyse the problems and suggests solutions to overcome these problems.

INTRODUCTION

The Dewey Decimal Classification System formulated by Melvil Dewey in 1876 is periodically revised by the publisher Forest Press Inc., as per the guidelines of the editorial policy committee, Library of Congress. Even though the DDC is the most widely used classification system internationally, it often falls short of meeting the requirements of libraries with literature on varied languages, cultures and religions. This limitation is most evident especially in the case of special libraries.

Although DDC has gone into 21st edition, most of the Indian libraries are using 18th edition as it is not very easy to keep switching over to new editions. The 18th edition was published in 1971, and later editions were published with a gap of 2-3 decades (19th edition: 1979, 20th edition: 1989, 21st edition: 1996).

There are lots of variations in the allocation of class numbers to the same topic from the 18th to 21st editions. For instance some class numbers which are unassigned in 18th edition were assigned to a different topic in the succeeding

editions. For Example: 337 18th edition= unassigned, 19th ed = International Economics. Further there is a major change in the allocation of class number with regards to the subject Sociology (and its branches). In the 18th edition the class number for sociology is 301, whereas in the 19th edition it is 305. The sub-divisions of sociology are given not only sub-main class status, but at times re-located under another sub main class (Social Structure 18th ed. = 301.5; 19th edition = 305; 20th edition 305 is Social Groups).

Some of the reasons which can be responsible for the occurrence of changes are:-

a) Expansion of existing subjects

ex;- Sustainable Development (Main Class: Economics)

Environment Science (Inter-Disciplinary, i.e. occurs under various Main Classes)

Computer Graphics (Main Class: Computer Science)

E-commerce (Main Class: Commerce/Management Science)

Genetic Engineering (Main Class: Genetics)

In-Vitro Fertilization (Main Class: Biology)

b) Invention of new knowledge/new coinage

ex:- Gem Therapy; HIV/AIDS

Internet; World Wide Web;
Information Technology

Diasporic Studies

c) Formation of a new subject with interlinkage of the existing subjects via interdisciplinary nature of new research

ex:- Bio-Engineering (or) Bio-Technology
(Biology + Engineering)

Quantum Computation (Physics +
Mathematics + Computer Science)

Crystal Engineering (Chemistry +
Engineering + Technology)

Finding fairly appropriate/nearest and suitable class number to a given book in the existing collection/class number in the edition already under usage is an uphill task. Further the absence of a standard number for the newly emerging topics may result in conflicting class numbers due to varied interpretation by different classifiers.

MAJOR CHANGES IN THE 18TH - 21ST EDITIONS OF DEWEY DECIMAL CLASSIFICATION

The preliminary step in the effort to resolve the said problem is the identification of the types of changes that have occurred over the successive editions such as:-

- * identification of class numbers enumerated in the 18th edition that have been shifted to some other subjects/groups in the revised next editions (using the 1st to 3rd summaries).
- * identification of class numbers which are unassigned in the 18th edition but assigned in consecutive editions.
- * identification of class numbers which are assigned in 18th edition but unassigned in subsequent editions.

- * modifications in the usage of auxiliary tables, for example, the Literature Auxiliary Table No. 3A, has been added in the 19th edition to facilitate further extension of the number to match the exact intention of the book.

Some important changes in the 19th edition of DDC are :

- * 301-307 Sociology has been recast from the former 301 (18th ed.), making additional use of the numbers 302-307.
- * 324 the Political Process has been recast from the former 324-329
- * Area notations 41-42 has been revised
- * In 900 there are substantial expansions in the history periods

Some changes in the 20th edition of DDC are:-

- * Changes occurred in generalities
- * 024 and 029 unused
- * Music and related materials have undergone significant reorganisation
- * Biographies are linked with the subject
- * This edition onwards, DDC is published in four (4) volumes.

In the 21st edition, important changes incorporated are:-

- * Standard Sub-Divisions of Christianity have been re-located to overcome bias
- * Major revisions 350-354 Public Administration; 370 Education; and 560-590 Life Sciences - reflect new views and changes in the nature of the literature.
- * Other adjustments reflect Political and Social changes, such as the major revision of Table 2 : -47 for the countries of the former Soviet Union.

- * Topics that have gained literary warrant since the publication of edition 20, e.g. rap music, virtual reality, and snow-boarding, are included in this edition.

Many added features such as:-

- * Over 150 pages have been added to the Relative Index which includes entries for new topics, selected built numbers, and terms to provide entry vocabulary for international users.
- * Terminology has been updated to reflect currency and international usage.

Identification Tools for latest topics

- a) The DDC index volumes can be a very useful tool for the identification of newly evolved topics. The alphabetical arrangement of index entries facilitates easy and convenient location of a new addition alongwith concerned class numbers, which bring together the numerous/varied occurrences of the particular topic spread over various disciplines in the schedule (knowledge tree).
- b) The summaries (1st to 3rd) given at the end of first volume of DDC (Tables) is also a very important source to find out new and allied topics.
- c) The content pages of subject journals contain the key-words related to the articles published. Scanning of new key-words from the titles and tallying with the index of the DDC is very helpful in tracing the new subjects and class numbers incorporated in the different editions of the DDC.
- d) The current accession register can be one more source for tracing new developments in knowledge field.
- e) Maintenance of titles with new topics (after identification of new subjects and the related class numbers) as a record along with the concerned DDC edition through which the subject-heading was traced and the class number were evolved can be a valuable tool for future use.

NEW DEVELOPMENTS IN KNOWLEDGE FIELD

The new areas of knowledge can be grouped into:

- * Topics which are newly evolved/formed through continuation of interdisciplinary research
- * Topics which involve depth study of a particular branch of knowledge
- * Topics which are re-located to different positions in the schedule (Main Class or Sub-Class).

Subjects Newly Evolved

Some of the topics that have evolved in the recent years are identified and listed which require assignment of appropriate class numbers in between the sub-divisions/arrays. Some of these have been accommodated after the 19th edition onwards.

- Diasporic Studies (Spread of people of one country over the Globe)
ex:- Ethnic minorities, Indian Diaspora in UK, USA, Singapore, etc.
- Tribes/Tribal Studies
- Anthropometry (Social Anthropology)
- Cultural Products
- Ecological Economics/Environmental Economics
- Sustainable Development (Economics)
- Environmental Science
- Genetic Engineering (Gene Code; Genome; Gene Mapping; Genetic sequencing)
- Global Business
- E-Commerce
- E-Business

- Information Technology
- Internet
- Cryptography

Adaptations within the Subjects

Some of the major areas are listed below which continue to be unresolved (modifications, revisions, restorations) through out various editions of the DDC (from 19th edition onwards).

- Computer Science

- Library Automation
- Library Digitalisation
- Bank Reforms
- Tax Reforms

Re-Accommodated Subjects

Some topics have been re-located to an entirely new main class in the DDC as is evident from the examples given below:

Topic	Source main class	Destination main class	
Culture	301.2 (18th ed.)	306 (19th ed.)	
Social Situation & Condition	309 (18th ed.)	900 (19th ed.)	Unused(20th ed.)

NEED FOR MODIFICATION

Most libraries currently using the 18th edition of DDC can not switch over to the later editions, but require to accommodate the newly emerging topics and new developments in many fields. Such libraries need urgent adaptations and modification of the 18th edition itself to overcome the problems. A few suggestions have been listed below to illustrate how and where the modifications may be incorporated.

Modifications - Chronological Table

Since the 18th edition of DDC was published in 1971, the period tables in the literature main class has not been updated for the millennium 21st. So, for the authors who are still living, period sectors/tables are already defined from the 20th edition onwards. These numbers may be adapted wherever necessary in the 18th edition (or) the period tables may be extended logically (in case of libraries which have no access to the 20th edition).

Modifications - Areas Table

Since the publication of 18th edition, many reorganisations of geographical boundaries have

occurred all over the globe due to political changes. Many nations have disintegrated into independent entities and many more are in the process. Some reunifications have also taken place. For instance the erstwhile USSR has broken into smaller units, whereas the West and East Germany have reunified. South and North Korea may in future unite together. There is thus an urgent need to restructure the area table (V.1, Table 2) to incorporate all these changes. The 21st edition of DDC has incorporated the necessary changes, but for those libraries which have no access to the 21st edition can accommodate the new geographical changes by further extending of existing numbers of the erstwhile nations in the Areas Table (Vol. 1, Table 2). Thus without disturbing the existing hierarchy a new position can be allocated by using unassigned number or extension of the existing number.

Modification of Scheduled Numbers

The already enumerated class numbers in the Schedule (Vol.2) of 18th edition DDC require to be modified to reflect the developments at various levels of knowledge evolution, viz addition of subdivisions under main class, review of strings, arrays. In case such developments are

incorporated in the subsequent editions, those numbers can be adapted (if there is no clash or shift in the main class). But topics which may not have been incorporated or those libraries which have no access to the later editions published, then such topics can be accommodated by a classifier after deliberations with the peer groups.

Modification of Language & Literature Schedule

The Language and Literature schedules have bias towards European Languages. Other

languages and literatures are assigned to 490 & 890 respectively. The number for Indian Literature synthesis is very cumbersome and long. To overcome these problems, the English Literature and language numbers can be used as base numbers with the alphabetic prefix to individualize Indian Languages and Literature [1].

Further, the period table to English Literature can be applied to all other literatures. This can be seen in the example in Table below :

English Language	Telugu	Hindi	Urdu
420	T420	H420	U420
425 (Grammar)	T425	H425	U425

English Literature	Telugu	Hindi	Urdu
820	T820	H820	U820
823 (Fiction)	T823	H823	U823

METHOD OF CLASSIFICATION OF CURRENT TITLES

The various stages involved in the process of classification of current titles is illustrated through few examples given below:-

- * Analysis of Title
- * Tracing of Core Topic
- * Identification of the Main Class
- * Zeroing down to the Nearest Sub-Division
- * Position Suitability Check
- * Collision/Clash (if any) Verification
- * Finalisation and Allotment

As the above is self-explanatory, it is felt that the explanation for each step is not necessary.

Example 1

Lewis' Dictionary of Occupational and Environmental Safety and Health, by Jeffrey W. Vincoli. Boca Raton : Lewis Publishers, 2000.

Analysis : The book deals with occupational hazards and effect on environment and the concerned workers, health and safety.

Core Topic : Occupational Hazards, Safety, Effect on environment and workers

Main Class : Social Sciences 300

Sub-Class : Social Pathology, Services, Association 360 Data processing applied to management science/business management 658.05

Position Suitability : The matching class number for the core topics are not listed in the index of 18th edition. Whereas 19th edition has provided the class number as 363.11. Position Suitability : Since E-Commerce also deals with application of electronics/computers (I.T.) to the modern business activities, the class number 658.05 is found as the most appropriate in available position.

Clash/Collision : Since 363.11 is left unassigned in the 18th edition to provide scope for future usage, it is very convenient to assign the number to the core topic mentioned above. Therefore no clash/collision occurs in this case. Clash/Collision: does not occur

Finalisation : The class number for core topic is derived and assigned as = 363.11 Finalisation : The class number for core topic is accommodated in = 658.05

The new topic e-commerce/e-business can be assigned as 658.05 in 18th edition.

(This example demonstrates the adaptation of suitable number from later edition)

(This example demonstrates the adjustment of a new topic in an appropriate position in the existing hierarchy).

Example 2

E-Commerce : The cutting edge of business, by Kamlesh K. Bajaj. Delhi: Tata McGraw-Hill, 2000.

Example 3

Formation of Jharkhand state: political implications, by A.S.S. Sharma (fictitious title)

Analysis : The book deals with application of electronics/information technology as part of modern management tool to promote business from remote locations.

Analysis : The book deals with the topic of division and carving of a new state Jharkhand in India and the political situation and conditions that occur as a result.

Core Topic : Electronics/Computer Applications to Commerce/Business Management

Core Topic : State Reorganisation Political Condition/implication

Main Class : Technology 600

India - Bihar State

Sub-Class : Managerial services 650
General Management/Administration 658

Main Class : Social Sciences 300

Sub-Class : Political Science 320

(Current terminology for this subject is Management Science)

Political Situation & Conditions 320.9

	Historical & Geographical Treatment - India 320.954	Indian Philosophy 181.4
Position Suitability :	Under Area Table of Vol.1, under 54 - India, no suitable number exists for Jharkhand as it has come into existence only in 1999-2000.	(181.41-181.48 Hindu-Brahmanical)
	Since it was earlier part of Bihar state (-5412) a new number has been assigned to the Jharkhand state as an extension of -5412 i.e.-54121	Others 181.49
Clash/Collision :	Has been avoided by using extension number of BIHAR STATE	Position Suitability : Exact matching Class No. for core topic is not available in the 18th edition. Therefore 181.49 can be extended to accommodate various eminent Indian philosophers.
Finalisation :	The class number for core topic as part of extension is = 320.954121	Clash/Collision : a) Since 181.49 is not further defined and "others" give scope for designing one's own schedule. Therefore no clash/collision occurs in this case.
(This example demonstrates the <u>extension in areas table</u> to accommodate a new geographical area)		b) Since Standard Sub-Divisions usage is instructed under 181 as -001 to -009, no clash/collision occurs.
<i>Example 4</i>		Finalisation : The Class No. for core topic is part of extension of 181.49 = 181.4905
Limits of thought, discussions, by Jiddu Krishna Murthy. London: Routledge, 1999.		(This example demonstrates the <u>extension of existing sub-division</u> (array))
Analysis :	The book deals with the philosophical thoughts of Jiddu Krishna Murthy, who is one of the famous Indian philosophers of 20th century.	Note:- Other Philosophers can be accommodated as:-
Core Topic :	Indian Philosophy	-01 Rabindra Nath Tagore
	Philosophical thoughts of an eminent Indian philosopher	-02 Aurobindo
		-03 Vivekananda
		-04 Ramakrishna Parama Hansa
		-06 Coomara Swamy
		-07 Saibaba
Main Class :	Philosophy 100	181.491 - 181.499 Philosophy of famous political figures.
Sub-Class :	Ancient, Medieval & Oriental Philosophies 180	-1 M.K. Gandhi
	Oriental Philosophy 181	-2 Jawahar Lal Nehru
		-3 Jaya Prakash Narayan

(Note:- for pure Political Philosophy Class under 320.01)

Example 5

Java programming on Linux. by Nathan Meyers. New Delhi: Techmedia, 2000

Analysis : The book deals with Java programming on Linux operating system

Core Topic : Java Programming Language
Linux Operating System Platform

Main Class : Generalities 001

Sub-Class : Data Processing (Computer Science) 001.6

Electronic Data Processing 001.64

Computer Programming 001.642

Coding (Programming Languages) 001.6424

Position Suitability : The matching Class Number for core topic 001.6424 is to be sharpened by the use of suffix (Alphabetical Device) = 001.6424J

It can be further sharpened to indicate the O/S with an underscore (string) = 001.6424 J_L

Clash/Collision : Clash does not occur as the schedule has provided the provision to add the Alphabetical Device

Finalisation : Class number for core topic is derived & assigned as = 001.6424 J_L

(This example demonstrates the extension of sub-division using the Alphabetic and String device)

Note: Other programming languages can be suitably accommodated such as:-

001.6424 C_U C++ on Unix

001.6424 F Fortran

Example 6

Global Warming: collaborative study on strategies to limit CO₂ emissions in Asia & Brazil. Edited by R.K. Pachauri, New Delhi : Tata McGraw-Hill, 1992.

Analysis : The book deals about the global warming due to the effect of CO₂ emissions in Asia and Brazil, and the strategies to limit the emissions

Core Topic : Global Warming CO₂ emissions
Effect on environment
In Asia and Brazil

Main Class : Science 500

Sub Class : Life Sciences 570

Biology 574

Ecology, Environment and Interrelation of organisms to environment 574.5

Position suitability : a) Since global warming deals with the effect of various pollutions causing depletion of the Ozone layers (caused by life styles & industrialization of humans) and the resultant effect on

environment, the Class No. 574.5 is found to be the most appropriate position available

- b) The number can be further sharpened by extending the number 574.5 to 574.51.

Clash/Collision : Since 574.51 is unused in the 18th edition, it causes no clash

Finalisation : The Class Number for core topic is derived and assigned as
= 574.51

(This example demonstrates the extension of main sub-division to accommodate new development in science)

CONCLUSION

For libraries to keep changing to the latest editions as and when classification schemes get revised is not a feasible solution. This involves transferring all the entries in the existing database records to new class numbers and changing class numbers physically in the reading materials and rectification of computer databases is a very cumbersome and labourious process. Thus the classification of new topics becomes complicated and cumbersome. The classification experts spend valuable time analysing and evolving suitable and appropriate class numbers within the existing edition (edition under current usage) or in consultation with the colleagues and subject experts.

There is thus a need to compile an adaptation list i.e. a ready reckoner to resolve or overcome the handicaps. This ready reckoner should be able to ease the problem of not only tracing numbers from 19th, 20th & 21st editions, (as it should be all inclusive), but also provide class numbers for topics not enumerated in these editions. The ready reckoner should also provide guidelines as to how to synthesise appropriate class numbers for newly emerging topics without

disturbing the existing structure of classes and also avoid clash in future.

Maintenance of the print-outs of summaries of various editions of DDC (18-21) can function as a ready reference tool, which saves the time and avoids tediousness of each time handling the bulky volumes of various editions.

The DDC publishes at the end of Vol. 1 a list which brings together all " the Relocations, Schedule Reductions and Changed Numbers" between the previous and current editions for the convenience of classifiers.

Further, the analysis of the acquired information along with class numbers helps the classification experts to understand the logical reasoning used to accommodate a new subject in the appropriate position in the existing main and sub-classes. If these lists are compiled periodically, it can act as an authority file and over a period it can function as a reference guide to successive staff assigned the classification work.

The authors hope that this paper will be of potential use to classification experts in overcoming the limitations and inadequacies of not only the 18th edition, but also serve as a model to overcome the limitations of any editions of DDC as the frontiers of human knowledge keeps fast expanding and no edition can keep abreast with these developments.

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